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स्वचल वाहनों की पालिश, द्रव – विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

AUTOMOBILE POLISH, LIQUID — SPECIFICATION

(First Revision)

UDC 667·826 : 629·113

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

July 1992

Price Group 3

Polishes Sectional Committee, CHD 023

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Polishes Sectional Committee had been approved by the Chemical Division Council.

The automobile polish, liquid, is used for cleaning, polishing and protecting lacquer, baked-enamel and synthetic enamel finishes of automobiles.

This standard was first published in 1976. The experience gained during the last 15 years made the Committee to decide to revise the standard. In this revision, a requirement for flash point has been added, the value for abrasive content and residue on sieve revised.

In the preparation of this standard, considerable assistance has been derived from US Federal Specification P-P 546C 'Polish, automobile, liquid'.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

AUTOMOBILE POLISH, LIQUID — SPECIFICATION

(First Revision)

1 SCOPE

1.1 This standard prescribes the requirements and methods of sampling and test for automobile polish, liquid.

2 REFERENCES

2.1 The Indian Standards listed below are neccessary adjuncts to this standards:

IS No.	*Title*
1070 : 1977	Water for general laboratory use (*second revision*)
1448 [P : 20] : 1982	Methods of test for petroleum and its products [P : 20]: Flash point by Abel apparatus (*revised*)

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions given in IS 8171 : 1984 in addition to the following shall apply.

3.1.1 *Approved Tender Sample*

The tender sample, if approved, shall serve as standard for application and performance only. The supplier shall submit the tender sample not less than 3 x 500 ml of the material.

3.1.2 *Ambient Temperature*

It is the temperature between 21°C and 38°C.

4 REQUIREMENTS

4.1 Description

The material shall consist of natural or synthetic waxes or a mixture of both, volatile aliphatic solvent, polishing oils, either emulsified in water or wax-solvent mixture to form a stable, free flowing liquid that can be readily dispersed upon shaking. It may contain mild abrasive of size not more than 53 microns.

4.1.1 The polish shall be a homogeneous mixture, uniform in appearance.

4.2 Toxicity

The material shall have no adverse effects on the health of personnel when it is used for its intended purpose.

NOTE — The manufacturer should give a certificate with respect to this clause.

4.3 Application and Performance

The material shall be capable of smooth, uniform and easy application.

4.3.1 The material shall be applied to the finished surface of metal panels by means of a pad of soft cloth and rubbed with circular motion of hand to produce high gloss. The finished surface shall not show less shine and the cloth used shall not show more signs of removal of paint film when compared with an approved sample.

4.3.2 The material shall be easily buffable with 3 to 4 minutes of its application and at the same time shall not present any difficulty for buffing if the polish film is left for a longer period.

4.3.3 The polish film shall display the required toughness under tropical conditions. It shall not catch dust, shall have the requisite water repellency, and shall not crack under varying conditions of temperature.

4.3.4 The polished surfaces shall maintain its shine at least for the same period as that of approved tender sample, when both are exposed to identical weathering conditions.

4.4 Keeping Quality

The automobile polish, liquid furnished under this specification shall conform to the requirements thereof for one year from the date of manufacture when stored in its original sealed containers under cover at ambient temperature.

4.5 The material shall also comply with the requirements given in Table 1.

Table 1 Requirements for Automobile Polish, Liquid

(*Clause* 4.5)

Sl No.	Characteristic	Requirement	Method of test (Ref to Cl No in Annex A)
(1)	(2)	(3)	(4)
i)	Non-volatile matter, percent by mass	8·0 to 12·0	A-1
ii)	Abrasive content, percent by mass, *Max*	3·0	A-2
iii)	Wax, oils and emulsifiers, percent by mass, *Min*	5·0	A-3
iv)	Residue on sieve, percent by mass, *Max*		A-4
	a) 90 microns IS Sieve (Taking 50 g of sample)	Nil	
	b) 53 microns IS Sieve	Traces	
v)	*p*H value (only for emulsion polish)	7·0 to 9·5	A-5
vi)	Flash point °C, *Min*	30	A-6

4.6 Stability

The material shall not show more than 5 percent separation upon standing and shall not separate into more than two layers when tested as described in **A-7**.

5 PACKING AND MARKING

5.1 Packing

The material shall be supplied in sound, clean and dry plastic or metal containers or suitable containers as agreed to between the purchaser and the supplier, tapered into a small neck at the top and provided with suitable caps. The sizes of containers shall preferably be 100, 200 and 500 ml or as agreed to between the purchaser and the supplier. The caps, under caps and wads when fitted to the containers shall prevent evaporation of solvent and ingress of dirt.

5.1.1 The containers shall be packed in lots in cartons which in turn shall be packed in card-board or wooden boxes or as agreed to between the purchaser and the supplier.

5.2 Marking

5.2.1 The containers shall be marked with the following:

a) Indication of source of manufacture;
b) Net mass and volume of the material when packed;
c) The words 'Automobile polish, liquid';
d) Directions for use; and
e) Month and year of manufacture.

NOTE — Any other marking required under Weights and Measures (Packaged commodities) Regulations 1977 may also be given.

6 TEST METHODS

6.1 Tests shall be carried out as prescribed in Annex A.

6.2 Quality of Reagents

Unless specified otherwise, pure chemicals and distilled water (*see* IS 1070 : 1977) shall be used in tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analyis.

7 SAMPLING

7.1 The method of preparing samples for the material and the criteria for conformity shall be as given in Annex B or as agreed to between the parties concerned.

ANNEX A

(*Clause* 4.5 *and Table* 1)

METHODS OF TEST FOR AUTOMOBILE POLISH, LIQUID

A-1 DETERMINATION OF NON-VOLATILE MATTER

A-1.1 Procedure

Weigh accurately about 10 to 12 g of polish into a tared flat bottom dish approximately 200 mm in diameter provided with a tightly fitted cover. Remove the cover and place sample over a steam-bath until the bulk of volatile matter has evaporated, and then place in an oven maintained at 105 ± 2°C for 4 hours. Cool in a desiccator, replace cover, and weigh the residue. Repeat drying and weigh to a constant mass.

A-1.2 Calculation

$$\text{Non-volatile matter, percent by mass} = \frac{B}{A} \times 100$$

where

A = mass in g of the sample taken for test, and

B = mass in g of the non-volatile residue.

A-2 DETERMINATION OF ABRASIVE CONTENT

A-2.1 Procedure

Accurately weigh 10 to 20 g of the sample to the nearest 0·01 g into an ignited, tared platinum dish. Evaporate to dryness on a steam-bath and heat over a low burner flame, gradually increasing the temperature, avoiding loss by spattering, until all volatile combustible matter has been removed and the sample is charred. Transfer the dish and contents to an electric muffle furnace at low red heat and ignite to constant mass at approximately 600°C. Allow to cool in a desiccator and weigh.

A-2.2 Calculation

$$\text{Abrasive content, percent by mass} = \frac{B}{A} \times 100$$

where

A = mass in g of the material taken for the test, and

B = mass in g of the residue left after ignition.

A-3 DETERMINATION OF WAX, OILS AND EMULSIFIERS

A-3.1 Calculate the wax, oils and emulsifier content from the difference in percentages of non-volatile matter (**A-1**) and abrasive content (**A-2**).

A-3.1.1 *Calculation*

Wax, oils and emulsifier content, percent by mass = percentage of non-volatile matter (**A-1**) — percentage of abrasive content (**A-2**).

A-4 DETERMINATION OF RESIDUE ON SIEVE

A-4.1 Procedure

Weigh the material into a 800 ml beaker, dilute to 500 ml with hot distilled water, cover with a watch glass and digest on a steam-bath for one hour. Disperse the solid matter, by stirring vigorously and pour liquid and solid matter through the sieve. Wash the material retained on the sieve with hot distilled water until no more solid passes through. Dry the sieve at 105 ± 2°C for 2 hours, cool and transfer the solid particles to a tared and previously weighed dish. Heat at the above temperature to constant mass.

A-4.2 Calculation

$$\text{Residue on sieve, percent by mass} = \frac{B - C}{A} \times 100$$

where

A = mass in g of the sample taken for test,

B = mass in g of the dish and residue, and

C = mass in g of the dish.

A-5 DETERMINATION OF *p*H VALUE

A-5.1 Procedure

Determine the *p*H on the undiluted sample by a suitable *p*H meter, using glass electrode.

A-6 DETERMINATION OF FLASH POINT OF ORGANIC SOLVENT

A-6.1 Procedure

Place about 400 g of the material in a suitable distillation flask and distill off the solvent in vacuum. Dry the distillate by shaking with anhydrous magnesium sulphate. Determine the flash point of the distillate as obtained by the method given in IS 1448 [P : 20] : 1982.

A-7 TEST FOR STABILITY

A-7.1 Procedure

Take 100 ml of sample of liquid polish in a 100 ml ground-glass stoppered graduated cylinder and allow to stand for 24 hours at room temperature. Record the amount of settling of the suspended matter in the vehicle. The emulsion shall not break into more than two layers. The upper layer separation shall not exceed a volume of 5 ml. Then shake the sample moderately and allow to stand for 10 minutes. No visible separation into layers shall take place. Subject the sample to three successive cycles, each cycle consisting of 24 hours at 4 ± 1°C, followed by complete thawing at room temperature and thorough shaking. Allow the polish to stand for 1 hour. The polish shall not separate into more than two layers and amount of separation shall not exceed 5 percent.

ANNEX B

(*Clause* 7.1)

SAMPLING OF AUTOMOBILE POLISH, LIQUID

B-1 GENERAL REQUIREMENTS FOR SAMPLING

B-1.0 In drawing, preparing, storing and handling test samples, the following precautions and directions shall be observed.

B-1.1 Samples shall be taken in a protected place not exposed to damp air, dust or soot.

B-1.2 The sampling instrument shall be clean and dry when used.

B-1.3 Precautions shall be taken to protect the samples, the material being samples, the sampling instrument and the containers for samples from adventitious contamination.

B-1.4 The samples shall be placed in clean, dry and airtight glass or other suitable containers on which the material has no action.

B-1.5 The sample containers shall be of such a size that they are almost completely filled by the sample.

B-1.6 Each sample container shall be sealed airtight after filling and marked with full details of sampling, the date of sampling and the year of manufacture of the material.

B-1.7 Samples shall be stored in such a manner that the temperature of the material does not vary unduly from the ambient temperature.

B-2 SCALE OF SAMPLING

B-2.0 Samples to determine the conformity of a consignment of automobile polish to this specification shall be selected so as to be representative of the consignment. Samples drawn in compliance with an agreement between the purchaser and the supplier, to evaluate the various characteristics of the material, shall be held to be representative of the consignment. In the absence of such an agreement the following sampling scheme is recommended to serve as a guide.

B-2.1 Lot

All the containers in a single consigment of the material drawn from the same batch of manufacture and of the same size shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture or of different sizes of containers the containers belonging to the same batch and size shall be grouped together and each such group shall constitute a separate lot.

B-2.1.1 Samples shall be tested for each lot for ascertaining the conformity of the material to the requirements of this specification.

B-2.2 The number of containers (*n*) to be chosen from a lot shall depend upon the size of the lot (*N*) and shall be in accordance with Table 2.

Table 2 Number of Containers to be Selected

(*Clause* B-2.2)

Lot Size *N* (1)	No. of Containers to be Selected *n* (2)
Up to 500	10
501 to 1 000	15
Above 1 000	20

B-2.3 These containers shall be chosen at random from the lot. In order to ensure the randomness of selection, random number table as agreed to between the purchaser and the supplier shall be used. In case such a table is not available, the following procedure shall be adopted:

> Arrange all the containers in the lot in a systematic manner and starting from any container, count them as 1, 2, 3, ..., up to r and so on where r is the integral part of N/n, N being the total number of containers in the lot and n the number of containers to be selected. Every rth container thus counted shall be withdrawn from the lot to give a sample for test.

B-3 PREPARATION OF COMPOSITE SAMPLE

B-3.1 Shake well each of the containers selected as in **B-2.3**. Pour out a quantity of polish such that the total quantity obtained from all the containers provides material sufficient for all the tests (about 500 g). Thoroughly mix the material drawn from all the selected containers so as to form the composite sample. Divide this composite sample into three parts, each sufficient for carrying out the intended tests and transfer them to thoroughly cleaned and dry sample containers. Send one each to the purchaser and the supplier, and reserve the third as referee sample bearing the seals of the purchaser and the supplier. Keep the referee sample at a place agreed to between the purchaser and the supplier.

B-4 NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

B-4.1 Tests for all characteristics shall be done on the composite sample.

B-4.2 The lot shall be declared as conforming to this specification if the test results satisfy the corresponding requirements.

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